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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/557,635	11/17/2005	Jeroen Arnoldus Leonardus Raaymakers	NL030539	4522
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/557,635	RAAYMAKERS, JEROEN ARNOLDUS LEONARDUS	
	Examiner	Art Unit	
	LaTanya Bibbins	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 17 November 2005.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-6,9,10 and 12-15 is/are rejected.
- 7) Claim(s) 7,8 and 11 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Preliminary Amendment

2. Receipt is acknowledged of the preliminary amendment filed on November 17, 2005. In the amendment, claim 15 was amended. Currently claims 1-15 are pending.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-3, 9, 10 and 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Iwazawa et al. (US PGPub Number 2003/0179665 A1).**

Regarding claim 1, Iwazawa discloses method for compensating tilt (θ) of an optical disc in an optical disc drive apparatus (Figure 3 and the corresponding discussion in paragraphs [0054]-[0061]), the optical disc drive apparatus comprising an optical lens which is mounted such as to be pivotable (element 105 of Figures 1, 2 and 8 and the discussion in paragraphs [0045]-[0050]); the method comprising the steps of:

selecting a tilt-dependent parameter A_{TE} having an extreme value when the tilt angle is zero (see the discussion in paragraphs [0054], [0056], [0062] and [0063]); measuring, at a certain radius of the optical disc, the value (A_{TE} (i)) of said tilt-dependent parameter for several values ($\psi(i)$) of a pivot angle of said optical lens (Figure 3 steps S1 and S2 and the corresponding discussion in paragraphs [0055] and [0056]); calculating the optimum pivot angle (ψ_{OPT}) corresponding to an optimum point of a parabolic fit through the measurements ($\psi(i)$, A_{TE} (i)) (Figure 3 step S4 and the discussion in paragraphs [0056]-[0059] and [0064]); selecting said optimum pivot angle (ψ_{OPT}) as setting for said optical lens during a write or read action at said certain radius (see the discussion in paragraph [0060]).

Regarding claim 2, Iwazawa discloses method according to claim 1, wherein said pivot angle (ψ) is kept constant during a measurement (see the discussion in paragraph [0055]).

Regarding claim 3, Iwazawa discloses method according to claim 1, wherein, after a measurement, said pivot angle (ψ) is changed stepwise (see Figures 4 and 5, also see the discussion in paragraphs [0066] and [0067]).

Regarding claim 9, Iwazawa discloses method according to claim 1, wherein said optimum pivot angle ($\psi_{OPT}(r_j)$) is calculated for a certain number of different measuring radii (r_j) (see step S2 of Figure 3 and the discussion in paragraphs [0055] and [0056]).

Regarding claim 10, Iwazawa discloses method according to claim 9, wherein a relationship between optimum pivot angle ($\psi_{OPT}(r_j)$) and radius (r_j) is stored in a memory

(see the discussion in paragraph [0057]); and wherein, when performing a write or read action at a certain disc radius (r), the pivot angle (ψ) of said optical lens is set to an optimum pivot angle ($\psi_{OPT}(r_j)$) on the basis of said relationship stored in said memory (see the discussion in paragraphs [0057]-[0060]).

Regarding claim 12, Iwazawa discloses method according to claim 1, wherein said tilt-dependent parameter (A_{TE}) is derivable from an output signal (S_R) of an optical detector of said optical disc drive apparatus (see the discussion in paragraphs [0055], [0056] and [0062]).

Regarding claim 13, Iwazawa discloses method according to claim 12, wherein said tilt-dependent parameter (A_{TE}) is a measure for the amplitude of a tracking error signal (S_{TE}), preferably a push-pull tracking error signal (S_{TE}) (see the discussion in paragraphs [0056] and [0071]).

Regarding claim 14, Iwazawa discloses method according to claim 12, wherein said tilt-dependent parameter is a peak amplitude of said tracking error signal, or a signal power of said tracking error signal, or an RMS value of said tracking error signal, or an absolute value of said tracking error signal (see the discussion in paragraphs [0055]-[0064]).

Regarding claim 15, optical disc drive apparatus (Figures 1 and 8), comprising: an optical system for scanning tracks of an optical disc (elements 100 and 200 of Figures 1 and 8), which optical system comprises light beam generating means (element 103 of Figures 1 and 8), an objective lens for focussing a light beam on the disc (element 105 of Figures 1 and 8), an optical detector for detecting a reflected light

beam (element 214 of Figures 1 and 8 and the discussion in paragraph [0042]), said objective lens being mounted such as to be pivotable (see the discussion in paragraphs [0045]-[0050]); a controllable pivot actuator for pivoting the objective lens with respect to the disc (element 211 of Figures 1 and 8 and the discussion in paragraphs [0026] and [0045]-[0050]); a control circuit having an input for receiving an output signal (S_R) from the optical detector, and having an output coupled to a control input of said pivot actuator (elements 211, 214 and 217 of Figures 1 and 8); wherein the control circuit is adapted to perform a tilt compensating method according to claim 1 (see the rejection of claim 1 above).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwazawa et al. (US PGPub Number 2003/0179665 A1) in view of Mochizuki (US Patent Number 5,502,698).

Regarding claim 4, Iwazawa discloses method according to claim 1 as noted in the 35 U.S.C. 102(e) rejection above. Iwazawa fails to specifically disclose, while Mochizuki discloses wherein said value ($A_{TE}(i)$) of said tilt-dependent parameter is

measured as an average value over substantially one disc revolution (see the discussion in column 16 lines 3-49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Mochizuki into that of Iwazawa. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to prevent the amplitude of the RF signal from being greatly reduced, which may occur depending on the angular position of the optical disc (as suggested by Mochizuki in column 16 lines 42-49).

7. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwazawa et al. (US PGPub Number 2003/0179665 A1), herein Iwazawa '665, in view of Iwazawa et al. (US PGPub 2002/0001262 A1), herein Iwazawa '262.

Regarding claim 5, Iwazawa '665 discloses method according to claim 1 as noted in the 35 U.S.C. 102(e) rejection above.

Iwazawa '665 fails to specifically disclose while Iwazawa '262 discloses, during said measurements, said pivot angle of said optical lens is continuously changed by a harmonic motion of the optical lens (see the discussion in paragraphs [0086]-[0090] regarding the resonance frequency of the tilt actuator and the discussion in paragraph [0095]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Iwazawa '665 and Iwazawa '262. One of ordinary skill in the art at the time the invention was made would have

been motivated to combine the teachings in order to achieve stability of the tilt servo system.

Regarding claim 6, while Iwazawa '262 further discloses wherein said harmonic motion has a frequency lower than the disc rotation speed (see the discussion in paragraphs [0086]-[0090]).

Allowable Subject Matter

8. Claims 7, 8, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 7 and 8, none of the references of record, alone or in combination suggest or fairly teach a method for compensating tilt of an optical disc in an optical disc drive apparatus including all of the limitations of claim 5, wherein said measurements are to be performed within a predetermined measuring range [Ψ_{MIN} , Ψ_{MAX}], and **wherein the amplitude (A_w) of said harmonic motion is larger than half the size ($\Psi_{MAX} - \Psi_{MIN}$) of said measuring range [Ψ_{MIN}, Ψ_{MAX}]** in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

Regarding claim 11, none of the references of record, alone or in combination suggest or fairly teach a method for compensating tilt of an optical disc in an optical disc drive apparatus including all of the limitations of claim 9, wherein said measurements

are performed for one measuring radius during one sweep of the pivot angle (ψ) within said measuring range [Ψ_{MIN} , Ψ_{MAX}]; **wherein, during the time period (t_j) that the pivot angle (ψ) is outside said measuring range [Ψ_{MIN} , Ψ_{MAX}], a radial actuator is controlled to perform a jump to another radius; and wherein said measurements are performed for said other measuring radius during the subsequent sweep of the pivot angle (ψ) within said measuring range [Ψ_{MIN} , Ψ_{MAX}]** in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571)270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LaTanya Bibbins/
Examiner, Art Unit 2627

/Wayne Young/
Supervisory Patent Examiner, Art Unit 2627